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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,764	10/16/2000	Li Deng	M61.12-0325	1585

7590 11/05/2003
WESTMAN CHAMPLIN & KELLY
Suite 1600 - International Centre
900 South Second Avenue
Minneapolis, MN 55402-3319

EXAMINER

OPSASNICK, MICHAEL N.

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,764

Applicant(s)

DENG ET AL.

Examiner

Michael N. Opsasnick

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1,12,13,24-26 and 29 is/are rejected.
- 7) ☒ Claim(s) 2-11,14-21,27,28 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. Claims 22,23 are allowable over the prior art of record.
2. Claims 2-11,14-21,27,28,30, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,12,13,24-26,29 are rejected under 35 U.S.C. 102(b) as being anticipated by Adlersberg et al (5012519).

As per claim 1, Adlersberg et al (5012519) teaches a method of noise reduction for reducing noise in a noisy input signal (as screening noise (col. 3 lines 55-62) comprising:

“fitting a function....at least one scaling vector” as using a background noise estimator to calculate noise, apply a fixed SNR for the desire noise floor (col. 8 lines 11-67)

“multiplying the scaling vector.....feature vectors” as setting the gain according to the noise estimates (Fig. 7,9,11; and col. 13 lines 20-45);

“adding a correction vector.....noisy input signal” as multiplying the clean vectors with a gain to reduce the noise of the original signal (co. 10 lines 10-50);

As per claim 12, Adlersberg et al (5012519) teaches:

“identifying a mixture.....signal” as calculating the gain mixture rep. The noise estimate for reduced noise (col. 8 line 11 – col. 9 line 65);

“multiplying.....feature vector” as ” as setting the gain according to the noise estimates (Fig. 7,9,11; and col. 13 lines 20-45);

“adding the correction vector.....clean signal” as multiplying the clean vectors with a gain to reduce the noise of the original signal (co. 10 lines 10-50);

As per claim 13, Adlersberg et al (5012519) teaches identifying a most likely mixture component for the noisy vector (as calculating the gain mixture rep. The noise estimate for reduced noise (col. 8 line 11 – col. 9 line 65);

As per claim 24, Adlersberg et al (5012519) teaches:

“accessing a set.....noisy channel signal.....clean channel signal” as noisy spectral amplitudes as well as the clean channel signals (col. 9 lines 20-30; col. 7 lines 45-60)

“grouping.....mixture components” as grouping of noisy spectral estimates (Col. 7 lines 30-45)

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“determining a correction value....clean channel vectors” as multiplying the clean vectors with a gain to reduce the noise of the original signal (co. 10 lines 10-50);

As per claim 25, Adlersberg et al (5012519) teaches:

“determining a correction value.....clean channel vectors” as fitting according to amount of allowable SNR (col. 8 lines 4-37)

As per claim 26, Adlersberg et al (5012519) teaches:

“fitting a function comprises performing a linear least squares calculation” as minimum mean square calculation (col. 6 lines 64-67)

As per claim 29, Adlersberg et al (5012519) teaches:

“determining an additive correction value and a scaling correction value” as adding and scaling (col. 9 line 45 – col. 10 line 10)

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see related art listed on the PTO-892 form.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872 9314,

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

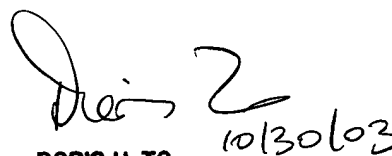
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (703)305-4089, who is available Tuesday-Thursday, 9AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached at (703)305-4827. The facsimile phone number for this group is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

mno

10/29/03



DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600